

IN THE CLAIMS:

The text of all pending claims, (including withdrawn claims) is set forth below. Canceled and not entered claims are indicated with claim number and status only. The claims as listed below show added text with underlining and deleted text with ~~strike through~~. The status of each claim is indicated with one of (original), (currently amended), (canceled), (withdrawn), (new), (previously presented), or (not entered). Please CANCEL claims 9 and 10, AMEND claim 8 and ADD new claim 15 in accordance with the following:

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1. (previously presented) An image processing apparatus for a robot which is built in a robot controller, and has a portable teaching pendant connected thereto, comprising:  
a unit for fetching an image from a camera;  
memory storing image data from the camera or intermediate image data obtained in a stage of image processing; and

a unit for converting image data from the camera, the image data from the camera stored in the memory, or the intermediate image data into a gray scale or a color scale, wherein:

said teaching pendant comprises a display unit and a unit used for manipulation for image processing and display of the converted image data; and

said display unit displays an image and indication for manipulation of image processing simultaneously, or allows a user to select either a switching mode or a superposition mode.

2. (previously presented) An image processing apparatus for a robot which is designed independent of the robot controller, and has a portable teaching pendant connected thereto, comprising:

a unit for fetching an image from a camera;

memory storing image data from the camera or intermediate image data obtained in a stage of image processing; and

a unit for converting image data from the camera, the image data from the camera stored in the memory, or the intermediate image data into a gray scale or a color scale, wherein:

said teaching pendant comprises a display unit and a unit used for manipulation for image processing and display of the converted image data; and

said display unit displays an image and indication for manipulation of image processing simultaneously, or allows a user to select either a switching mode or a superposition mode, wherein the robot is designed independently of the robot controller.

3. (previously presented) The apparatus according to claim 1, further comprising:

a unit for displaying and superposing geometric graphics on the image displayed on the display unit in accordance with the operation procedure of image processing and specifying an image processing with respect to the image.

4. (previously presented) An image processing apparatus for a robot which is built in a robot controller, comprising:

a unit for fetching an image from a camera;

memory which stores image data from the camera or intermediate image data obtained in a stage of image processing; and

a unit for converting image data from the camera, the image data from the camera stored in the memory, or intermediate image data into a gray scale or a color scale, wherein:

a portable teaching pendant is connected to said robot controller through a cable; and

said teaching pendant comprises a unit for generating or editing a robot program, a unit for operating the robot, and a display unit, and can display on the display unit the converted image, and comprises a unit used for manipulation for image processing; and

said display unit displays, indication for generating or editing of the robot a program and indication for manipulation of image processing, together with an image simultaneously, or allows a user to select either a switching mode or a superposition mode.

5. (original) The apparatus according to claim 4, further comprising:

a unit for displaying and superposing geometric graphics on the image displayed on the display unit in accordance with the operation procedure of the image processing and specifying an image processing with respect to the image.

6. (previously presented) The apparatus according to claim 1, wherein a part of the operation unit of the teaching pendant is configured by a touch panel.

7. (original) The apparatus according to claim 4, further comprising

a unit for incorporating an instruction to process an image into a program of a robot.

8. (currently amended) A method, comprising:

fetching an image from a camera;

storing image data from the camera or intermediate image data obtained in a stage of image processing; and

converting image data from the camera, the image data from the camera stored in the memory, or the intermediate image data into a gray scale or a color scale; and

displaying the converted image data on a teaching pendant,

wherein said displaying displays the image data and indication for manipulation for image processing simultaneously, or allows a user to enter a switching mode or a superposition mode.

9. (canceled)

10. (canceled)

11. (previously presented) The apparatus according to claim 2, further comprising:  
a unit for displaying and superposing geometric graphics on the image displayed on the display unit in accordance with the operation procedure of image processing and specifying an image processing with respect to the image.

12. (original) The apparatus according to claim 2, wherein a part of the operation unit of the teaching pendant is configured by a touch panel.

13. (original) The apparatus according to claim 4, wherein a part of the operation unit of the teaching pendant is configured by a touch panel

14. (original) An image processing apparatus for a robot which is built in a robot controller, comprising:  
a unit for fetching a visual image of the robot from a camera;  
memory which stores the visual image from the camera or obtained in a stage of image processing; and  
a unit for converting the visual image into a gray scale visual image;  
a portable teaching pendant connected to said robot controller through a cable; and said teaching pendant comprising:  
a unit for generating or editing a robot program,  
a unit for operating the robot, and  
a display unit that can display the gray scale visual image and an image processing manipulation menu; and  
an image processing unit used for image processing; and

said display unit displays an indication for generating or editing of the robot program and an indication for manipulation of image processing, together with the gray scale visual image of the robot simultaneously and allows a user to select between using the pendant for image processing teaching and robot teaching/control.

15. (new) An image processing apparatus for a robot which is built in a robot controller, and has a portable teaching pendant connected thereto, comprising:

a unit for fetching an image from a camera;

memory storing image data from the camera or intermediate image data obtained in a stage of image processing; and

A a unit for converting image data from the camera, the image data from the camera stored in the memory, or the intermediate image data into a gray scale or a color scale,

wherein said teaching pendant includes a display unit and a unit used for manipulation for image processing and display of the converted image data,

wherein said display unit displays an image and indication for manipulation of image processing simultaneously, or allows a user to select either a switching mode or a superposition mode, and

wherein said display unit displays a video image from the camera that is continuously updated.

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